

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Method for estimating the quantity of CO₂ present in a geologic formation (20) comprising the following steps:

- said formation is penetrated by a well (10) drilled from the surface,
- said formation is contacted with a drilling fluid having a pH greater than 8 that travels from the formation to the surface,
- a given quantity of return fluid is sampled at the surface and transferred to a cell (5),
- the pH of said quantity of fluid is measured,
- a given quantity of product acidifying said fluid is added to adjust the pH to a value of less than 4,
- the CO₂ level of the gas in the cell is measured after the acidification step,
- the quantity of CO₂ contained in the geologic formation is calculated from the CO₂ measurement.

2. (Previously presented) Method according to Claim 1, wherein the quantity of carbonate supplied by the geologic formation and/or by the additives in the formulation of said fluid is taken into account.

3. (Previously Presented) Method according to Claim 1, wherein the pH is adjusted to approximately 2.

4. (Currently Amended) Method according to Claim 1, wherein said gas is transferred from the cell to an analyzer in which the CO₂ level of the gas is measured by an inert gas scavenging the internal space of the cell.

5. (Currently Amended) Method according to Claim 2, wherein said additives are taken into account by running the CO₂ measurement method on a given volume of initial fluid, i.e. before contact with the formation.

6. (Previously Presented) Method according to Claim 1, wherein the sampling rate is determined according to the fluid travel rate.

7. (Currently Amended) Device for estimating the quantity of CO₂ present in a geologic formation (20) traversed by a well (40) in which a drilling fluid with a pH greater than 8 travels between said formation and the wellhead at the surface, characterized in that it comprises means (7) for sampling a given quantity of fluid at the wellhead, a cell (5) to hold said quantity of fluid, means (11) for measuring the pH in said cell, means (13) for inert-gas scavenging of the internal space of the cell, means (16) for injecting an acidifying product into said cell, and means (15) for measuring the quantity of CO₂ contained in the internal space of the cell.

8. (Previously Presented) Device according to Claim 7, wherein adjusting means control the acid injection means according to the pH measurement.

9. (Previously Presented) Device according to Claim 7, wherein the means for measuring the quantity of CO₂ comprise an infrared cell or a thermal conductivity measuring cell.

10. (Previously Presented) Device according to Claim 7, wherein control means carry out the following steps, at a rate determined by the fluid flowrate:

- Sampling of a quantity of fluid;
- Measurement of pH;
- Injection of a quantity of acid;
- Scavenging the cell space;
- Measurement of CO₂;
- Emptying the cell.

11. (Currently Amended) Device according to Claim 7, including means for measuring the internal pressure {12} of said cell.

12. (Previously Presented) Device according to Claim 7, including means for regulating the temperature of said cell.